

# **Joint Technology Exchange Group Meeting Minutes**

## **Columbus, Ohio, 5-7 November 2002**

### ***“Best Business Practices”***

1. The [Joint Depot Maintenance Activities Group \(JDMAG\)](#) and [Battelle Memorial Institute](#) co-hosted the [Joint Technology Exchange Group \(JTEG\)](#) meeting 5-7 Nov 02 in Columbus, OH. The [meeting agenda](#) and a list of [attendees](#) are at attachments 1 and 2, respectively.

2. The JTEG Principals meeting began 0800, 5 Nov 02. Col Carter welcomed the JTEG Principals and participants to the meeting and introduced Tom Gorman to speak on the JTEG Strategic Plan.

a. Mr. Gorman briefed the [JTEG Strategic Plan](#), a tasking given by the JDMAG Director/JTEG Chair to enhance JTEG program. The JTEG Strategic Plan is intended to match depot needs with technology solutions, maximize communication, increase JG-DM visibility of joint technology information exchange, maximize program office participation, develop a generic technology insertion process model, identify JTEG metrics, and achieve program recognition for the JTEG.

b. The JTEG Principals accepted the JTEG Strategic Plan and committed to its execution. The JTEG Strategic Plan is at attachment 3.

3. The JTEG Business Meeting began at 0900, 5 Nov 02. Col Carter, the JTEG Chairperson/JDMAG Director, welcomed the nearly 100 attendees to the JTEG meeting and noted that while some technology areas would be presented, the primary focus of this JTEG meeting was on best business practices from DoD, industry, and academia. Col Carter also addressed customer feedback and how it was used to improve the JTEG meetings and requested feedback to continuously improve the forum. After the opening remarks the meeting proceeded through the agenda. Complete briefings are available on the JDMAG website by viewing the [agenda](#), and selecting any highlighted briefing.

a. Mr. Steve Siens, JDMAG/JTEG, began the business meeting by providing announcements of future JTEG meetings including:

- 1-3 Apr 03 - Joint Symposium with Commercial Technologies for Maintenance Activities (CTMA), Joint Technology Exchange Group, Joint Council on Aging Aircraft (JCAA), Propulsion Environmental Working Group (PEWG), and the Sustainment Readiness Working Group (SRWG)  
Meeting location: Salt Lake City, Utah  
Meeting theme: “21st Century Depot Maintenance”

- 8-10 Jul 03 – JTEG Meeting  
Meeting location: Tobyhanna Army Depot  
Meeting theme: “Electronics”
- Nov 03 – JTEG Meeting  
Meeting location: Okalahoma City ALC  
Meeting theme: “Composites”

b. Mr. Carl Adams, JDMAG/JTEG, addressed the status of JTEG’s nearly 800 active and closed JTEG Projects. (Note: an Active Project is a technology or process still undergoing evaluation to determine if the technology/process is mature, feasible, valid, etc. A Closed Project is one that has been determined to be mature, feasible, valid, etc. and available for insertion or cancelled.) Currently JTEG has 21 active projects with seven new JTEG projects opened as a result of briefings from the JTEG/Portsmouth Naval Shipyard meeting, 16-18 July 02. A listing of all JTEG projects may be found on the JDMAG/JTEG web site at: <http://www.jdmag.wpafb.af.mil/projects.htm>. The seven new JTEG projects for tracking are:

- Permanent Part Marking Technologies
- Wiring Integrity Systems
- Damage and Wear Assessment
- Laser Precision Metal Deposition
- Paint Booth Improvements With Bio-Filtration Technology
- Portable Laser Coating Removal System
- Mobile Depainting Manipulator

During the current update cycle, two projects were proposed to be closed:

- Cadmium Alternatives for Fasteners
- Non-Ozone Depleting Chemicals (ODC) Oxygen Line Cleaning

Subsequent to this proposal, a brief on the Non-ODC Oxygen Line Cleaning System was provided. Based on the briefing, JTEG Principals determined that this project has value to the depot maintenance community and would continued to be tracked to assist in technology transfer to other facilities.

Mr. Adams next spoke on the Maintenance and Logistics (M&L) Calendar, a list of meetings, conferences, and symposiums of possible special interest to the depot maintenance and logistics community. The M&L Calendar is posted on the JDMAG web site at: <http://www.jdmag.wpafb.af.mil/mlcal2002.pdf>.

c. The JTEG Principals spoke on the current technology insertion methodology and/or initiatives within their respective services. This was in response to JTEG Action Item 02-07-03.

1) Mike McMillan, Air Force JTEG Principal, briefed "Technology Transition/Insertion and Depot Maintenance Modernization." The briefing focused on the Air Force technology transition/insertion process, current activities, and future initiatives. Mr. McMillan also provided some the current issues associated with modernization such as funding shortfalls for implementation and modernization and inadequately addressed depot needs. The briefer also identified investment programs available and used for depot modernization such as: Capital Purchases Program (CPP), Military Construction (MILCON), Pollution Prevention, Manufacturing Technology, Commercial Operation and Support Savings Initiative (COSSI), Productivity, Reliability, and Maintainability (PRAM) and Sustaining Engineering.

2) Ralph Janus, Army JTEG Principal, provided a briefing entitled, "N-STEP: NAC-Standardized Exchange of Product." N-STEP is a Congressionally funded defense program being implemented under the auspices of Tank-automotive Armaments Command (TACOM). The objectives are to establish a STEP-enabled design, production, and lifecycle support environment for TACOM's weapons systems; and validate that the use of STEP product data, in conjunction with effective CM/PDM capabilities, offers measurable improvement in weapon system parts re-supply. N-STEP is both an R&D and a parts production program.

3) Mr. Steve Gubas, alternate Naval Sea Systems Command (NAVSEA) JTEG Principal, briefed the "Depot Technology Insertion Process." The technology insertion process utilized by NAVSEA was identified as a "Three Step Approach." Details of each phase of the process were outlined in Mr. Gubas briefing and include:

- a) Identification – Programs that address ship maintenance issues and generate a "technology pull."
- b) Process – Programs to fund/execute development and application of the technology to ship maintenance application.
- c) Implementation/Institutionalize – Programs that install and activate the technologies in the ship maintenance communities.

4) Mr. Ron Wimmer, Naval Air Systems Command (NAVAIR) JTEG Principal, briefed "Technology Insertion in the Naval Air Systems Command Aviation Depots." The briefing identified the Naval aviation system reporting relationship as well as the facilities utilized by the NAVAIR Science and Technology Office. Manufacturing Technology (MANTECH), Repair Technology (REPTECH), Small Business Innovation Research (SBIR), Naval Avionics Depots Science and Technology (NADEP S&T Working Group), Commercial Technologies for Maintenance Activities/National Center for Manufacturing Sciences (CTMA/NCMS), and the Navy Centers of Excellence (COE) were programs identified for development and technology transfer of new manufacturing processes and equipment. During discussion, Mr. Wimmer agreed to provide additional information to JDMAG on the Navy COE.

5) Mr. Durwood Pollock, Marine Corps JTEG Principal, briefed current technology insertion methodology and initiatives. The Marine Corps Logistic Bases

(MARCORLOGBASES) Engineering division has responsibilities that include Engineering Support (ECPs, deviations, etc.) and technical liaison to depots, System Command, supply chain management, other Services, Office of Naval Research (ONR), DoD funding programs, academia, and industry. The Capital Purchase Program, USMC modernization planning, weapons system acquisition support (maintenance plans), and process standards (LAV, AAV) are also supported by the Engineering division. Technology and environmental initiatives, modernization planning, engineering support to maintenance centers were discussed in addition to new technologies currently being transitioned into the Marine Corps maintenance depots.

6) Mr. Ron Harris, Defense Logistics Agency (DLA) JTEG Principal, briefed on DLA Industrial machinery facilities and how their programs provide support to the Military Services and other Government Agencies. Mr. Harris spoke on DLA's capabilities gave examples of how a number of depots are utilizing DLA services.

d. The JTEG meeting continued with a series of technology briefings.

1) Chuck Ryan, Director Commercial Technologies for Maintenance (CTMA) Activities Program briefed the JTEG audience about the goals, objectives and highlights of the CTMA program. Through a cooperative agreement between NCMS and the Office of the Secretary of Defense, and administered by Office of Maintenance, Policy Programs, Resources and Planning, the program is designed to identify, form, launch and deploy new projects coupling the needs and strengths of commercial industry with the DoD maintenance and repair facilities. A primary focus is to reduce overall costs and increase readiness.

2) Mr. John Herrington, Versar, Inc. briefed "Oxygen Line Cleaning System (OLCS)." He provided background information that included existing procedures, program objectives, system features, testing results, operational and cost benefits, and implementation methods. His brief prompted the JTEG Principals to recommend that this project continue to be tracked to assist in technology transfer to other facilities.

3) Mr. Pete Ginkel, Telesis Technologies, briefed "Telesis Permanent Part Marking," a technology that uses a dot peening system to provide an inexpensive way to permanently mark various metal parts. This is a mature technology and recent improvements have made it a good choice for product identification and tracking.

4) Mr. Norman Stark, Stark Encapsulation, presented a brief on "Hazardous Material Encapsulation Technology." Stark Encapsulation specializes in the remediation of hazardous heavy metals, solid waste, and low-level radioactive materials. The encapsulation technology forms a hard, dense chemical cement that does not deteriorate and/or leach over time or from exposure to harsh environments. The cement has various applications such as road base construction and runway base construction.

5) Mr. Ed Ware of the Boeing Aerospace Guidance and Repair Center (GRC) gave a briefing describing the capacity and capability of the Boeing GRC facility. This

facility is a world-class organization with the capability to do system integration test and repair, sub-system test and repair of electronic components and electro-mechanical devices, instrument repair and calibration, and module repairs to the component level.

6) Mr. Hector Hernandez, Warner Robins Air Logistics Center (WR-ALC), briefed the conclusions of a study on “Corrosion Preventive Compounds (CPC) for Avionics.” These compounds are currently used to inhibit corrosion on avionics connectors. Previous studies demonstrated that connector corrosion could be prevented with CPC lubricants. These lubricants are showcased as inexpensive, have little risk and have no impact on normal operations. However, the current study showed a large difference among lubricants and that some currently used lubricants may actually have harmful effects. Subsequent discussion indicated that the results of this study should be forwarded to other organizations for their consideration.

e. On 6 Nov 02 JTEG Business Meeting reconvened at 0900 with Col Carter, JTEG Chairperson, JDMAG Director again welcoming speakers and guests to the JTEG meeting. This portion of the JTEG meeting focused on the theme of the JTEG meeting, “Best Business Practices” in use by the Services. Highlights of the briefs are below.

1) Mr. Walt Atchley, OADUSD (L&MR) MPP&R, briefed “Future Logistics Enterprise (FLE),” and described the overall goals of the FLE program as a means to operate end-to-end logistics business as a single enterprise. The FLE encompasses six initiatives:

- (1) Depot Partnering Condition
- (2) Condition Based Maintenance Plus
- (3) Total Life Cycle Systems Management
- (4) Executive Agents
- (5) End-to-End Distribution
- (6) Enterprise Integration -- The enabler of the other five initiatives with a modern integrated information approach supporting the entire community

2) Col Pamela Carter, JDMAG, briefed the progress of the implementation of “USAF Depot Maintenance Reengineering and Transformation (DMRT)” initiatives, actions, and the expected benefits. DMRT will improve depot maintenance support to the warfighter and financial performance. The DMRT process has identified over 300 problems consolidated into 8 focus areas. Program success requires major reengineering and transformation of Air Force Depot Maintenance processes. DMRT is currently on schedule, and the AF/IL and HQ AFMC DMRT Implementation offices are providing close guidance, direction, and oversight. The program goal is the development of a world-class depot maintenance operation.

3) Lt. Col. Jimmy C. Bailey, WR-ALC, briefed “Adapting LEAN at Warner Robins Air Logistics Center.” The briefing outlined how repair differs from production, the evolution of LEAN at Robins, the transformation of C-5 Galaxy, expansion in administrative areas which included value stream mapping. The briefer explained

institutionalization of the LEAN program required a fulltime commitment from leadership, from teams, and from everyone in the organization.

4) Mr. Carl Gardner, Defense Logistics Agency, briefed on the “Automated Information Technology (AIT).” The Defense Logistics Agency is currently executive agent of the Department of Defense’s Automatic Information Technology concept of operations. AIT uses a variety of read and write data storage technologies to store identification information. The suite of technologies includes bar codes, magnetic stripes, integrated circuit cards, optical memory cards and radio frequency identification tags. AIT also includes the hardware and software required to create the storage devices, read the information stored on them, and integrate that information with other logistics data. The technology uses satellites to track and redirect shipments. Information on each device can range from a single part number to a self-contained database.

5) Mr. Larry Halbig, Navy BMPCOE, briefed “NAVY Best Manufacturing Practices Center of Excellence.” The BMP Program is an industry and government cooperative technology transfer effort that improves the global competitiveness of the U.S. industrial base. Its primary objective is to identify and validate best practices, document them, and then encourage industry, government, and academia to share information about them. By fostering the sharing of best practices, BMP has become a national resource in helping organizations benchmark with the best, learn from others’ attempts, and avoid costly and time-consuming duplication. One important feature of the BMP is the accomplishment of on-site surveys to identify the best business practices of organizations. The BMP Center of Excellence is a partnership among the Office of Naval Research’s BMP Program; the Department of Commerce’s Bureau of Industry and Security; and the University of Maryland’s Engineering Research Center.

6) Mr. Mike Starks, RRAD briefed “LEAN Manufacturing at Red River Army Depot.” Mr. Starks gave examples of the project in the following areas, LEAN enterprise conversion, typical value stream analysis, early results, and the challenges the project faced. Challenges faced included converting to the LEAN mindset while maintaining high production levels, convincing the workforce that LEAN concepts are not just another fad to be endured until they fade, and maintaining LEAN practices where they have been implemented.

7) Mr. Mike Gnam, National Center for Manufacturing Sciences (NCMS), briefed “Knowledge Based Product Development Paradigms: A Process for World Class Performance.” Knowledge Based Development focuses on thoroughly exploring multiple possibilities from all operational perspectives, combining and narrowing them for optimal performance, and leveraging all the acquired knowledge for future applications. The potential for DoD is the ability to capture/catalog “knowledge sets”, not just final designs, enable DoD partnering in knowledge acquisition, allow a common basis for meaningful design reviews, and minimized schedule risk through alternate solutions / risk tradeoffs. The program metrics claim 80% value-added productivity versus the traditional 20-30 percent.

8) Mr. Ken Johnson, NCMS, briefed "e-Learning Enhanced Apprenticeship Programs." e-Learning represents a significant cost savings over conventional learning. Information may be viewed any time, by any employee, is more secure than "brick and mortar" training, and hardcopies can be tailored for immediate relevance to a target of any size. e-Learning allows organizations to "capture" corporate wisdom and can yield greater knowledge transfer through multi-media.

9) LT Brian McIntyre, Office of Naval Research, briefed "Tech Solutions - E-Business Program." The program provides Sailors and Marines a path to express their operational needs and ideas as well as their quality of service and quality of life issues directly to the Naval Research community. Science advisors determine if the request is valid and if it lends itself to an S&T solution. Solution providers are then solicited for solution ideas. Project initiation typically begins within 50 working days of request and a solution is demonstrated within 12 months. The briefer provided examples of solutions identified by the program such as the non-skid deck scrubber, the portable battle lantern, and the submarine scheduler.

10) Mr. Gary Deckard and Mr. Ellis Hitt of the Battelle Corporation briefed "On-Demand Manufacturing." This program is designed to enhanced parts availability through partnering. Key elements of the program involve forecasting and on demand manufacturing

11) Associate Professor Shahrukh A. Irani, Ohio State University, briefed "Hybrid Cellular Layouts: Any Role in Repair and Maintenance Facilities?" Hybrid cellular layouts are designed to avoid the physical separation of identical machines distributed in several cells without destroying the desired machine and part compositions of the cells. A software package that automates the manual methods of Production Flow Analysis (PFAST) is available. Software is useful for achieving material flow reduction at either the factory, shop, cell or workstation level in the factory. Future enhancements in PFAST as well as associated metrics were discussed.

f. The business portion of the JTEG meeting concluded at 1700 with JDMAG/JTEG thanking all presenters and participants. The next JTEG event is scheduled for 1-3 Apr 03 at Salt Lake City UT as a joint symposium with the Commercial Technologies for Maintenance Activities organization.

4. A JTEG Principals Meeting was held after the close of the business meeting. Action Items from previous JTEG meetings were reviewed and all were closed. No new action items resulted from this JTEG meeting but several commitments were noted and include:

- Mr. Tom Gorman (JDMAG) will provide an electronic copy of a JTEG orientation briefing developed by JDMAG to the JTEG Principals for their use.
- NAVAIR JTEG Principal (Mr. Ron Wimmer) will provide JDMAG with additional information on Navy Centers of Excellence.

- JDMAG will continue to work on development of a glossary of abbreviations and acronyms for the JTEG program.
- JDMAG will forward information on the “Hazardous Material Encapsulation Technology” to the Joint Group on Pollution Prevention presented by Stark Encapsulation.
- JTEG will continue to track Non-ODC Oxygen Line Cleaning System to assist in technology transfer to other facilities.

The remainder of the Principals' meeting focused on the JTEG Strategic Plan and the associated metrics. The principals concluded that in order to assess the value of the JTEG program the following actions would be taken:

- A letter of inquiry to the participants of JTEG meetings asking them to describe the value of the JTEG program in terms of the value of networking associated with the meetings
- Add questions to future meeting critiques asking for assessment by the participants of the value of the networking and technology opportunities available through the JTEG meetings.
- A Survey would be developed to forward to JTEG participants requesting information pertaining to value of the JTEG program.
- JDMAG send a memo to the JTEG Principals asking them for known successes of technology projects identified through JTEG that have been implemented at the depots.

5. On 7 Nov 02 tours were available for JTEG meeting attendees at the Battelle Memorial Institute, Columbus OH, and at the Boeing Guidance and Repair Center (GRC), Newark, OH. At the Battelle Memorial Institute, greeted JTEG participants toured the following:

- Battelle Operations
- Underwater Equipment
- Joint Biological Point Detection System (JBPDS)
- Helicopter Environmental Characterization
- F-16 Display
- B-52 Display
- E-3A Display

At Boeing GRC, JTEG participants toured the following:

- Boeing GRC Operations
- Measurement and Test Equipment Laboratory
- Aerospace Machining and Support Shops
- Guidance and navigation systems for the multiple aircraft systems



- Minuteman III and Peacekeeper Intercontinental Ballistic Missiles
- Cruise missile sensors
- Dual Miniature Inertial Navigation System
- (DMINS) for aircraft carriers

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